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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,574	03/29/2004	Miyashita Kazuhiro	1981038	3662
7590	09/27/2006		EXAMINER TON, ANABEL	
PRO-TECHTOR INTERNATIONAL SERVICES 20775 Norada Court Saratoga, CA 95070-3018			ART UNIT 2875	PAPER NUMBER

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/812,574	<b>Applicant(s)</b> KAZUHIRO ET AL.	
	<b>Examiner</b> Anabel M. Ton	<b>Art Unit</b> 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it exceeds 150 words.

Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- To begin, claim 1 does not provide for a clear structural relationship between the lower prism, light guide plate, upper prism, upper prism plate the LCD module and an air gap as recited in the claim. As recited it is unclear as to how all these elements cooperate with each other to form a functioning structure and it is also unclear where these elements are located with respect to each other in a functioning relationship. Applicant's recitation of "small angled specifically positioned and specifically oriented light emitting device", as such, is not defined by the specification in that the term "small angled specifically positioned and specifically oriented light emitting device" is a relative one and provides no clear definition as to what applicant is intending to identify as a characteristic of the device. The same applies to applicant's recitation of "said LCD backlight module emits light beams from specified positions, limited to small angle range and pointing to specified orientation". It is unclear if applicant is referring to the lower

prim in line 9 when applicant mentions in line 14 "plurality of lower prisms". In the final line of claim 1, it is unclear what applicant is attempting to define by the recitation "being able to be looked as if those were emitted from corresponding specified positions of LGP".

- With regards to claims 4 and 5 it is unclear what applicant is intending to define by the recitation "said upper prism plate can be looked as if those were emitted from nearby of border of corresponding lower prisms of LGP". Furthermore applicant has not clearly defined with regards to what reference point applicant is intending to define "upper and lower".
- With regards to claim 6, the recitation "wherein the length of the bottom side of lower prism's quasi triangle which contacting LGP is near the distance of openings of LCD substrate", it is unclear what applicant is attempting to define by this recitation. Furthermore applicant makes previous mention in any of the claims of LCD having openings.
- With regards to claims 10-11, it appears that applicant is intending to describe a correlation between the upper and lower prisms but it is unclear and difficult to understand what, for example, is meant by "the light beams are incident on, refracted by and transmit into said entering face of corresponding upper prism and the angles formed by normal of total reflecting face of upper prism and rays of said light beams propagating inside upper prism and onto reflecting face are equal to or greater than critical angle of upper prism material" specifically since it

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is unclear as to what/which angles formed applicant is referring to and that applicant has not disclosed a critical angle of upper prism material.

- With regards to claims 16, 17, 20 and 22, applicant states a second example intending to clarify and earlier limitation "i.e.", these statements are deemed vague and indefinite since it is unclear if the statement that follows "i.e." is part of the invention.

6. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

7. **As best understood the following rejection applies.**

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito (5,890,791).

10. Saito discloses a liquid crystal display device (fig 1) having a lower prism with an emitting face propagating light there through, a light guide plate with a plurality of lower prisms, an upper prism having an entering face and a total reflective face attached to an upper prism plate, light propagated within the LGP are refracted by a lower prism and

transmitted through an emitting face across an air gap transmitted into an upper prism and plate wherein light is totally reflected through an upper face there through.

- The lower prisms are quasi triangled;(21b)
- The cross section of the upper prisms are quasi triangled;(13b)
- With regards to claims 4-5, it is not understood what applicant is intending to claim or define as subject matter of the instant invention in particular the recitation "said upper prism plate can be looked as if those were emitted from nearby border or corresponding lower prisms of LGP". What is understood is that light is transmitted through the upper prism plate, which Saito anticipates (figs 1,2).
- With regards to claim 6, it is not understood what applicant is intending to claim or define by the recitation "the length of the bottom side of lower prism's quasi triangle which contacting LGP is near the distance of openings of LCD substrate" in particular since applicant has not mentioned any openings previously in the LCD substrate, nor the LCD being a substrate but a module. Saito discloses the bottom portion including the plate of the upper prismatic plate in contact with the LCD module. (figs 1,2).
- With regards to claim 7, since applicant has not defined a quantitative value for the phrase "small angle range" it is assumed that Saito satisfies this limitation since a multitude of beams of less than 90 degrees (which are considered to be

within a small angle range) are transmitted through the upper prismatic plate (Fig 20);

- With regards to claim 9, as mentioned above, applicant makes no mention of openings in the LCD substrate, furthermore, the recitation "lines drawn from borders of lower prisms and vertical to upper prism plate pass through openings of LCD substrate" is not considered to be part of the invention mainly since "lines drawn from borders of lower prisms" is not a structural part of the invention, but only present to show in which direction emitted light is propagated. Figure 20 of Saito discloses such a line.
- With regards to claim 10, Saito discloses the lower prism transmitting light to the upper prisms across an air gap; light transmitted through the bottom prism to the upper prism is totally internally reflected at specific angles within the prism towards an output surface. (figs 1,2).
- With regards to claim 11, Saito discloses transmitted light totally reflected by the prisms and transmitted by the upper prism plate, the width of the light beams transmitted through the upper prism plate is near in width to the light transmitted within the lower prism. With regards to the direction of the light beams, inherently they are transmitted in a direction including an orientation vertical to the upper prism plate since inherently at least a portion of the light beams must be transmitted in a vertical manner to reach the output surface.



- With regards to claim 12, since applicant has not defined an opposite angle of the lower prisms emitting face, it is assumed that Saito provides an opposite angle of a lower prism-emitting surface, which is in between zero and another variable amount greater than zero.
- With regards to claim 13, it appears the angle formed by the emitting face and the bottom side of the lower prism is greater than 0 and less than 90 degrees.
- With regards to claim 14, applicant has previously defined that the upper prisms were quasi triangular as opposed to a quasi triangle belonging to the prism, applicant has not defined what the vertex angle of the prism is nor has applicant provided antecedent basis for a critical angle of the lower prism's material.  
Therefore as best understood, it appears Saito discloses an angular output from the upper prism that is less than 90 degrees and less than 180 degrees.
- With regards to claims 15 and 16, it appears that the shortest distance between the upper and lower prisms is less than the radius of curvature of the prism's entering face. (figs 1,2).
- With regards to claim 17, since applicant has not provided antecedent basis for the openings in the light guide plate, as best understood, Saito discloses the length of the lower prisms near the LCD plate. (figs 1,2).

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- With regards to claim 18, it appears that Saito discloses angles formed by normal of the upper prisms and rays of beams inside the upper prism on the total reflecting face. (figs 1,2).
- With regards to claim 19 it appears that Saito discloses angles of light beams emitted from the lower prism are between zero and a number greater than zero. (figs 1,2,3-15).
- The subject matter of claim 20 is rejected as stated above.
- The subject matter of claim 21 is rejected as stated above.
- The subject matter of claim 22 is rejected as stated above.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 23-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito.

13. Saito discloses the claimed invention as stated above except for the specific recitation of filling layer with a similar refractive index being applied between the upper prism plate and the LCD. It would have been obvious to one of ordinary skill in the art at the time the invention was made to place a filling layer, such as an adhesive, with similar optical properties as that of the surfaces being adhered to one another for the purpose

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of providing the optical device with light transmitting properties uninterrupted by an additional layer provided to bond or adhere one surface to another.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anabel M. Ton whose telephone number is (571) 272-2382. The examiner can normally be reached on 08:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anabel M Ton  
Examiner  
Art Unit 2875

AMT

A handwritten signature in black ink, appearing to read 'Anabel M. Ton', written in a cursive style.